

# State of Virginia

CC Docket Nos. 00-218, 00-249 and 00-251

REQUEST:

AT&T Communications of Virginia, Inc., and WorldCom, Inc., Set #11

DATED:

September 26, 2001

ITEM:

"Verizon VA routinely upgrades and grows switches by replacing "getting started" components such as switch processors, and receives a AT&T/WCOM 11-73

growth discount for these purchases."

REDACTED

### State of Virginia

CC Docket Nos. 00-218, 00-249 and 00-251

REQUEST:

AT&T Communications of Virginia, Inc., and WorldCom, Inc., Set #12

DATED:

October 24, 2001

ITEM:

AT&T/WCOM 12-7

Please explain in detail why the SCIS model does not model TR008 lines on SM2000s. Please provide correspondence with

Telcordia or other parties, notes, memoranda, analyses,

workpapers, or documentation on this issue.

REPLY:

In the early 1990s, Lucent Technologies introduced the SM2000 switching module platform in the 5ESS switching system. Telcordia enhanced the SCIS 5ESS model to address the new SM2000 switching module platform. These enhancements took place over several SCIS releases in the mid 1990s. During the course of these enhancements, support for the classic switching module platform was maintained as well. As SM2000

development work progressed, Telcordia evaluated all line and trunk interfaces that were currently modeled on the classic

switching module platform to determine whether or not each one

should be modeled on the new SM2000 switching module

platform as well. Telcordia decided to only model TR303 on the

SM2000 switching modules.

With respect to the requested documentation, please see Verizon

VA's response to AT&T/WCOM 12-3.

### State of Virginia

CC Docket Nos. 00-218, 00-249 and 00-251

REQUEST:

AT&T Communications of Virginia, Inc., and WorldCom, Inc., Set #12

DATED:

October 24, 2001

ITEM:

AT&T/WCOM 12-11

Please explain how cost minimization was taken into account

when developing the TR008 SCIS work-around input

methodology (i.e., TR008 lines on GR303 line peripherals using

1:1 line concentration).

REPLY:

No "cost minimization" was taken into account in developing the work-around solution. It is Telcordia's understanding that Verizon modeled TR008 lines on classic switching modules as GR303 lines on SM2000 switching modules (including EXM remotes) in SCIS/MO. Additionally, Verizon developed their GR303 input data that maintained the characteristics (*i.e.*, remote terminal capacity, concentration ratio, etc.) of their TR008 remote terminals deployed in Virginia.

### State of Virginia

CC Docket Nos. 00-218, 00-249 and 00-251

REQUEST:

AT&T Communications of Virginia, Inc., and WorldCom, Inc., Set #12

DATED:

October 24, 2001

ITEM:

AT&T/WCOM 12-41

Please specify whether the 5ESS equipment components' total investment that terminates GR303 lines is higher than the equipment component's total investment that terminates TR008

lines

REPLY:

5ESS switching system investment for TR008 lines and GR303 lines are based on the same Integrated Digital Carrier Unit (IDCU) peripheral. The investment for a single IDCU is the same for TR008 lines and GR303 lines. The way this investment is apportioned to TR008 line terminations and usage versus GR303 line terminations and usage is dependent upon parameters such as traffic characteristics, administrative fill, remote terminal capacities, and remote terminal concentration. No general statements can be made as to when TR008 investments will be higher or lower than GR303 investments. In the case of GR303 lines, additional packet equipment is required to support operations and maintenance functions for each GR303 remote terminal. These operations and maintenance capabilities are not available with TR008. The investment for this packet equipment is included in the line termination investment results for GR303 lines. Additional detail concerning TR008 and GR303 calculations is provided in the 5ESS SCIS User Guides previously provided to AT&T/WorldCom by Verizon VA.

# State of Virginia

CC Docket Nos. 00-218, 00-249 and 00-251

REQUEST:

AT&T Communications of Virginia, Inc., and WorldCom, Inc., Set #12

DATED:

October 24, 2001

ITEM:

AT&T/WCOM 12-15

Please identify the capacity of the remote terminals VZ-VA assumes to fill with approximately 1000 lines per remote terminal (Attachment D to New Switch Cost Study). Please provide the supporting documentation for the lines per remote terminal assumption.

REPLY:

The weighted average was developed based on the percentage of lines in each size RT from the Loop Study. Please see attached file: 12-15 attachment.xls



# Weighted Average RT Size

	VA	1039
JURISDICTION_ID	RT_SIZE	SUM(NEWDAQ*WKG_DA)
VA	224	241025
VA	448	396860
VA	672	458631
VA	896	399907
VA	1120	371273
VA	1344	347947
VA	1568	299038
VA	1792	239256
VA	2016	186461

select st.jurisdiction\_id, rt\_size, sum(newdaq\*wkg\_da)
from lcam.rtcap\_results\_t rt, lcam.study\_table\_t st
where rt.study\_id = 742 and thresh = 1 and rt.study\_id = st.study\_id
group by st.jurisdiction\_id, rt\_size

# State of Virginia

CC Docket Nos. 00-218, 00-249 and 00-251

REQUEST:

AT&T Communications of Virginia, Inc., and WorldCom, Inc., Set #12

DATED:

October 24, 2001

ITEM:

Please provide all workpapers, correspondence, and documents AT&T/WCOM 12-43

used or prepared either by VZ-VA or Telcordia in considering

whether the cost of GR303 lines at 1:1 concentration would be

similar to the cost of a TR008 line.

REPLY:

There are none.

REQUEST:

AT&T Communications of Virginia, Inc., Set #9

DATED:

July 24, 2001

ITEM: AT&T 9-47

Please explain whether any combination local/tandem switches are currently deployed in Virginia. If so, please provide a list of CLLIs and the manufacturer of each combination switch. For each combination switch, please provide the number of subscriber lines per switch, the number of local trunks and the number of tandem trunks per switch.

REPLY:

See attached spreadsheet.

set9-47-att doc

ATTset9-47-att.doc

# Verizon Response to ATT 9-47 (July, 2001)

State	Office Name	TIRKs CLLI	Vendor	Working Lines In Service	Tandem Trunks In Service	End Office Trunks In Service
VA	Culpeper	CLPPVACU02T CLPPVACUDS0	Lucent	16,084	4,995	1,438
VA	Danville	DAVLVADA03T DAVLVADADS0	Lucent	28,850	5,644	2,476
VA	Fredericksburg	FRBGVAFB03T FRBGVAFBDS0	Lucent	37,258	13,373	1,478
VA	Leesburg	LSBGVALB02T LSBGVALBDS0	Lucent	31,173	9,274	4,609
VA	Lynchburg	LYBGVACH03T LYBGVACHDS0	Lucent	31,197	13,676	2,027
VA	Norton	NRTNVANO02T NRTNVANODS0	Lucent	6,347	4,271	2,884
VA	Harpersville	NWNWVAHV52T NWNWVAHVDS0	Siemens	30,493	5,880	3,669
VA	Petersburg	PTBGVAPB51T PTBGVAPBCG0	Lucent	35.725	3,756	1,474
٧A	Turner Road	RCMDVAIT52T RCMDVAITDS0	Lucent	24,687	58,300	4,191
VA	Luck	RONKVALK52T RONKVALKDS0	Lucent	46,979	27,306	3,038
VA	Staunton	STTNVAST03T STTNVASTDS0	Lucent	20,773	5,984	1,167
VA	Winchester	WNCHVAWC03T WNCHVAWCDS0	Lucent	38,648	4,392	1,982

REQUEST:

AT&T Communications of Virginia, Inc., Set #9

DATED:

July 24, 2001

ITEM: AT&T 9-7

Referencing the software expenditures in the RTU factor study:

- a) Please correlate the FRC 1877 with the ARMIS account codes (i.e., 2212) and and subaccounts.
- b) Please identify and describe the ARMIS subaccounts for account 2212 shown on the investments page of the RTU factor study.
- c) Please provide the documentation, calculations and analysis used to produce the RTU expenditures.
- d) Please provide the RTU expenditures by ARMIS subaccounts. If this data is not available, please provide the lowest level of detail available.
- e) Please define and explain the Projects portion of the software budget. Please provide examples of the types of RTUs contained in the Network Services, Enterprise Solutions and Retail Markets RTU forecasts.
- f) Please explain the adjustment for 2001 Software Purchases.
- g) Please explain what "growth" means on Line 2 of Software Budget.
- h) Please provide the documentation, calculations and analysis used by the budget organization to produce the RTU 2001 RTU forecast.
- i) Please provide the documentation, calculations and analysis used by the budget organization to produce the RTU 2002 RTU forecast.
- j) Please identify whether any buy-out software is included in the expenditures or forecasts. Please identify the functions the software provides and specify the total dollar amount(s) of the buy-out and how much was allocated to each year in the RTU study. Please provide the contract or agreement supporting the buy-out.
- k) Please explain the difference between the two Part G-9 RTU documentation files.

REPLY:

a. Switching Software is charged to FRC 1877 USOA/FCC
 Account 2690 with the corresponding hardware charged to
 USOA/FCC Accounts 2212 and 2220. See Tab for VZ East
 Investments for Accounts 2212 and 2220 – Part G-9-VZ-

- VA-RTU Factor Study, VZ-East Investment tab.
- b. See Part G-9-VZ-VA-RTU Factor Study, VZ-EAST Investment Tab.
- c. The forecasted RTU fees are developed through two processes. The first process, related to access line and trunk growth, utilizes a price times quantity calculation as derived through the Verizon Capital Allocation Model. The second process reflects the numerous project deployment plans identified within the Capital Program Database. RTU fees (software) requirements are based upon site level deployment plans as developed by Network Engineering and Network Planning. The deployment plans ensure software releases for the switches within all states are kept current in accordance with switch vendor support guidelines, and in support of new hardware and feature activation. These deployment plans are primarily based upon Business Plans for the Enterprise, Retail, & Wholesale organizations, Regulatory orders, Equipment Capacity Exhaust forecasts, and Vendor Generic Support Guidelines. Multiple organizations beyond Network Engineering and Network Planning have input to this process. The 2002+ figures were developed based upon historical trending and the assumption Telecom capital will remain relatively flat year over year.
- d. The ARMIS report provides data on a USOA/FCC Account basis only (i.e. 2690). The lowest level of detail available is on an FRC basis, which has been provided.
- e. The figures reflected in Rows 3-6, and Row 8 reflects project deployment plans identified within the Capital Program Database (for 2001). RTU fees (software) requirements are based on site level deployment plans as developed by Engineering and by Network Planning. The deployment plans ensure software releases for the switches within all states are kept current in accordance with switch vendor support guidelines, and in support of new hardware and feature activation. See also response to 7-C.
- f. See response to 7-C.
- g. The figures reflected in Row 2, labeled 'Growth,' were developed based upon a price times quantity calculation as derived through the Verizon Capital Allocation Model.
- h. See response to 7-C.
- i. The 2002+ figures were developed based upon historical trending and the assumption Telecom capital will remain relatively flat year over year.
- j. Yes. This information is not readily available and would require that each 1877C charge in each company be

- reviewed. This request therefore would require a special
- study.

  k. There is no difference between the two Part G-9 RTU documentation files other than the file names.

## **VERIZON EAST**

# Rationale for adjustment for 2001 Switch Software Purchase -- 2001

The line labeled "adjustment" was an addition to the 2001 budget to cover unforeseen project requirements. An analysis of the bottoms up program submission revealed that the 2001 RTU View of \$141.2 M appeared to be understated when compared to prior years actuals of \$184.6M for 1999 (adjusted for the One Time Impact of SOP98-1 Implementation) and \$179.2M for 2000. The adjustment of \$30M brought the Total Adjusted View to \$171.2M, which was felt to be more in line with prior actuals.

### .1 Digital Switching Equipment 377C

This account shall be used to record the original investment of stored program control digital switching equipment that utilizes time division networks to provide transmission paths. The boundaries are the equipment, including the main distributing frame or equivalent and connectors mounted thereon which terminates a transmission path to and including the main distributing frame or equivalent and connectors mounted thereon which resumes the transmission path. A representative list of the items included in this account are listed in Note A. It also includes associated equipment in accordance with Note B. Also included is the investment of any remote electronic switching units controlled by offices classified to this account.

Includes coin line monitors in those jurisdictions (NJ, PA, DC, and MD) which have tariff rates for the service provided by that equipment. These plug-in devices are located in the central office and monitor the operation of the related coin telephones.

Digital Switching assets include the initial Right to Use Fees for this equipment and equipment used in conjunction with switching equipment.

This account excludes such equipment which is an integral component of a major unit that is classifiable to another function.

The original cost of common equipment shall be classified to the account appropriate for the type of plant with which it is predominately used.

Individual items, previously capitalized to FRC 277C, that cost \$500 or less and were purchased prior to 1/1/89 are classified to FRC 287C.

Individual items, previously capitalized to FRC 377C that cost \$500 or less and were purchased prior to 1/1/89 are classified to FRC 387C.

Individual items, previously capitalized to FRC 477C, that cost \$500 or less and were purchased prior to 1/1/89 are classified to FRC 487C.

Individual items, previously capitalized to FRCs 577C, 677C, 887C and 987C, that cost \$500 or less are classified to FRC 587C.

Note

A:

### Items (Representative List)

Automatic message recording equipment Call store equipment

Central control and processing equipment including initial operating system software for computers classified to this account

Controllers (e.g., central message, input/output, line group, peripheral unit)

Direct memory access units

Coin line monitors

Frames, distributing, protector, switching, and trunk

Furniture and tools costing more than \$200, specifically designed and dedicated for use with this switching system or component

Input/output devices including disk and tape drives, display and alarm units Jumper wire, initial installation

Junctor equipment

Line concentrating module

Line unit

Maintenance and administration position

Message link

Network module

Peripheral module equipment (e.g., line modules, trunk modules, switch modules)

Permits, privileges, and rights of way for installation of externally mounted central office equipment.

Plug-in units (e.g., board, card, pack, circuit pack

Power equipment (e.g., busbars, generators, engines, chargers and storage batteries

Remote line equipment

Signal transfer points

Station equipment as provided for in NES-AL-84-011

Speech link, network and peripheral

Test equipment, hardwired or specifically designed and dedicated for use with particular major switching system or component. Portable test equipment included in this category which costs \$500 or less or has a life of less than one year should be charged to Account 6212, Digital Electronic Expense (See Account 2116.1, Other Work Equipment).

Tools, regularly used in central office. Tools which cost \$500 or less and regularly used in the C.O. should be charged to Account 6212, Digital Electronic Expense. (See Account 2116.1, Other Work Equipment).

Time Multiplex equipment

Visual display unit

### Note

B:

Associated equipment is that equipment which functions with a specific type of central office equipment, e.g., step-by-step, crossbar, electronic, etc.

### Items (Representative List):

Alarm and signal apparatus
Auxiliary framing
Batteries, rectifiers, generators, power boards and other power plant
equipment
Cable and cable racks
Distributing frames and equipment thereon
Frame and aisle lighting equipment
Ladders and ladder track
Relay racks and panels

Classify such equipment to the account representing the type of central office equipment with which it is principally used rather than on its own characteristics.

### Note

C:

The cost of subscriber line concentrators in an operating area which are located outside of central offices, including the cost of the stand-by units, should be classified to the switching account for that area which is expected ultimately to include the cost of the

greatest number of central-office-located working units of such equipment.

Note

D:

Switching plant excludes switchboards which perform an operator assistance function and equipment which is an integral part thereof. It does not exclude equipment used solely for the recording of calling telephone numbers in connection with customer dialed charged traffic, dial tandem switchboards and special service switchboards used in conjunction with private line service; such equipment shall be classified to the particular switch that it serves.

### .2 Public Data Network - 477C

Access Concentrator - Line Director Unit (LDU)/Extended Line Director Unit (XLDU)

Includes the cost of Line Director Unit (LDU)/Extended Line Director Unit (XLDU) circuit packs which provide protocol conversion for the Public Data Network.

### Included is:

ONLY Line Director Unit (LDU)/Extended Line Director Unit (XLDU) of the Access Concentrator.

### .3 Public Data Network - Other 577C

Includes the cost of equipment which is used for the Public Data Network and is not included in 477C. This does not include data voice multiplexers.

### Included are:

Access Concentrator (except for Line Director Unit)
Associated Modems
Network Nodes (NN)
Network Control Centers (NEC)
Administrative Processors (AP)
Packet Switch (#IPSS)

### 4 Stored Prog. Control - Cust. 677C Prem. - Digital - DC, MD, VA, WV Only

This account shall be used to record the investment in equipment, as described above, for the White House, FBI, and the Pentagon.

### 5 Equal Access 887C

This account includes the cost of Digital Electronic Switching equipment required for the initial provision of Equal Access to other common carriers.

### .6 Network Reconfiguration 987C

This account includes the cost of Digital Electronic Switching equipment required to reconfigure the network to comply with LATA boundaries.

### Note:

Refer to the Plant & Engineering Accounting Standards publication for additional details such as reportable codes (FRC/FC), sketches, special instructions, etc., as appropriate.

### 8 Nonregulated Digital Electronic Switching

Nonregulated Protocol Conversion Equipment 277C

This account includes the cost of dedicated nonregulated digital electronic switching equipment located in or near a digital central office and used only in providing nonregulated protocol conversion services. The equipment either converts a data stream to different protocol or, as in the case of the Protocol Agile Pad (PAP), facilitates the provision of protocol conversion service by forwarding the end user to the appropriate service provider. This account includes only dedicated nonregulated investment. It does not include any common (shared) digital electronic switching investment (e.g., the PDN protocol conversion equipment classified to account 2212.2 /477C).

Nonregulated Message/Information Storage and Forwarding Equipment 567C

Includes the cost of investment associated with various nonregulated Message Services and Information Retrieval equipment. This equipment can be located in the Central Office, MMOC, or other locations. It provides message and information polling, storage, retrieval and/or forwarding features. It must be utilized as 100% nonregulated. It includes such items as routers, bridges, terminals, imaging platforms, processors, multiplexers, polling equipment, etc.

Investment in this FRC is used to provide the following nonregulated products:

Message Storage Service
Send-A-Call
Voice Messaging Service
Distributed Imaging
Coin Messaging Revenue Settlements Service
IntelliMessage
IntelliTrade

### .9 Nonregulated

Digital Electronic Switching Protocol Conversion Equipment - Embedded Assets (\$500 or less), purchased prior to 1/1/89, previously recorded in FRC 277C. 287C

Digital Electronic Switching Equipment - Embedded Assets (Portable Tool & Test Equipment, \$500 or less) purchased prior to 1/1/89, previously recorded to FRC 377C.
387C

Public Data Network - Access Concentrator - Embedded Assets (Portable Tools & Test Equipment, \$500 or less) purchased prior to 1/1/89, previously recorded to FRC 477C.

487C

Digital Electronic Switching - Embedded Assets (\$500 or less). Purchased prior to 1/1/89, previously recorded in FRC's 577C, 677C, 887C and 987C. 587C

# State of Virginia

CC Docket Nos. 00-218, 00-249 and 00-251

REQUEST:

AT&T Communications of Virginia, Inc., and WorldCom, Inc., Set #12

DATED:

October 24, 2001

ITEM:

Please list each feature input in the New Switch Cost Study and AT&T/WCOM 12-51

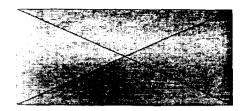
compare to the Original Switch Cost Study. Please explain all

differences.

REPLY:

Verizon Virginia is working on a response and will provide it

shortly.



Telcordia Technologies Practice BR-235-070-115

# Switching Cost Information System 5ESS User Guide

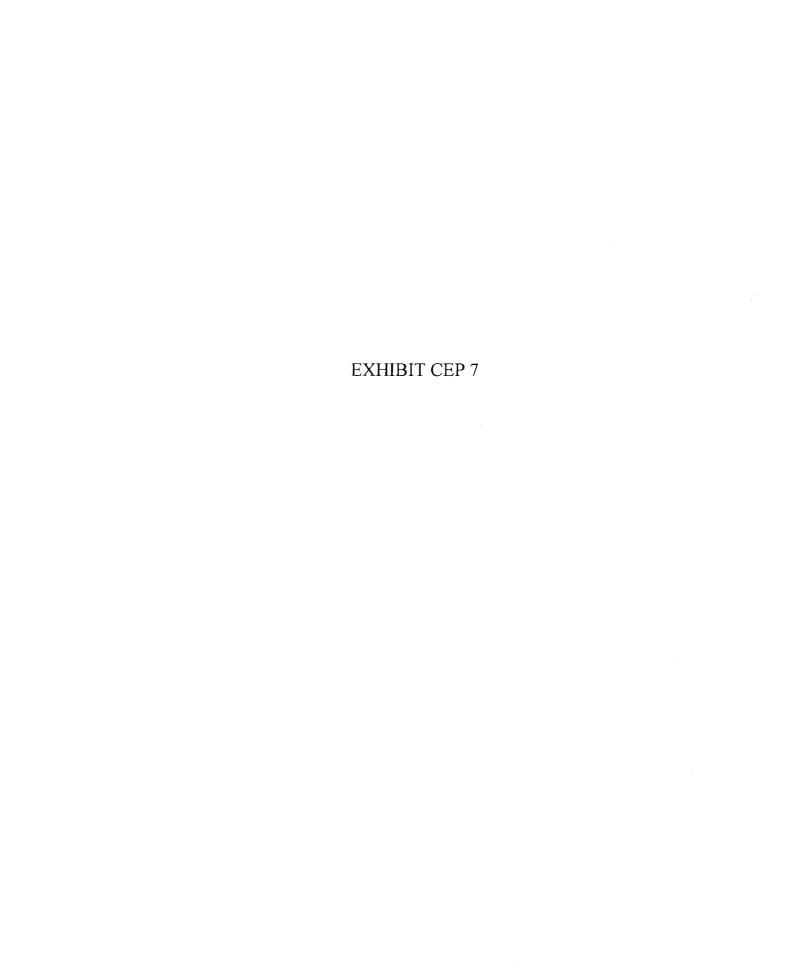
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# REDACTED

# **REDACTED**



UNBUNDLED NETWORK ELEMENT - RECURRING		Z PROPOSED RECURRING COST 11/01/01	S I R	F/ WORLDCOM IWITCHING RESTATED ECURRING RATE 11/20/2001
Unbundled Line Ports			•	
POTS/PBX/CTX	\$	2.91	\$	0.95
ISDN BRI or Ctx Port	\$	17.06	\$	7.19
ISDN PRI Port	\$	113.24	\$	43.27
Unbundled Public Access Line Port (UPALP)	\$	2.91	\$	0.95
Unbundled Coin Port (UCP)	\$	3.78	\$	1.82
SMDI II (Simplified Message Desk Interface) Port	\$	289.55	\$	172.19
Switched DS1 Port (DS1 Port with Line Treatment)	\$	91.14	\$	35.19
Automatic Identified Outward Dialing (AIOD)	\$	0.56	\$	0.24
Direct Inward Dialing and Outward (DID/DOD)	\$	8.38	\$	1.83
IDLC Port per Interface Group (TR008/GR303)	\$	129.30	\$	59.55
Unbundled Dedicated Trunk Ports				
Dedicated Trunk Port - End Office	\$	90.84	\$	34.95
Dedicated Trunk Port - Tandem	\$	92.67	\$	35.90
Dedicated Trunk Port - TOPS	\$	76.99	\$	45.79
Unbundled Individual Line Port Features Res/Bus Features				
Call Waiting Display Name and Number	\$	0.0256		0.0152
Three Way Calling	\$	0.3309	\$	0.0703
Remote Call Forwarding	\$	2.0460	\$	0.3542
Calling Number Delivery	\$	0.0237	\$	0.0137
Calling Number & Name Delivery	\$	0.6904	\$	0.6482
Anonymous Call Rejection	\$	0.0342	\$	0.0074
Automatic Recall (Return Call)	\$	0.2670	\$	0.0551
Call Waiting Automatic Callback (Repeat Call)	\$ \$	0.0002	\$	0.0001 0.0545
, atomatic surplus (repeat surp		<u> </u>	<u> </u>	
Unbundled CENTREX Features		27405		0.0500
CTX Intercom	\$	0.7135	\$	0.0580
CTX Announcement	\$ \$	0.7010	\$	0.1431 0.0703
Ctx A-thomatic Recell (Return Call)		0.1335	\$	0.0276
Ctx Automatic Recall (Return Call)  Ctx Distinctive ringing	\$	0.0049	\$	0.0007
Ctx Loudspeaker Paging	\$	8.1220	\$	1.7394
Ctx Meet-Me Conference	\$	0.1302	\$	0.0774
Ctx Selective Call Acceptance	\$	0.0336	\$	0.0069
Ctx Selective Call Forwarding	\$	0.0077	\$	0.0016
Ctx Selective Call Rejection	\$	0.0470	\$	0.0063
Ctx 6-Way Conference	\$	1.2250	\$	0.2575
Ctx Station Message Detail Record (SMDR)	\$	12.9835	\$	7.7210
Ctx Repeat Call	\$	0.2644	\$	0.0545
Ctx Call Transer - All Calls	\$	0.0147	\$	0.0031
Ctx Call Waiting Terminating ( All Calls)	\$	0.00010	\$	0.00003
Ctx Directed Call Pick-up with Barge-In (Originating)	\$	0.0019	\$	0.0004
Ctx Executive Busy Override	\$	0.0003	\$	0.0002
Jnbundled ISDN Features			· · · · · · · · · · · · · · · · · · ·	
ISDN Intercom	\$	0.7135	\$	0.0580
ISDN Announcement	-   <del>*</del>	8.7721	\$	0.3590

ISDN 3-Way Calling	\$ 0.3309	\$ 0.0703
ISDN 6-Way Conference	\$ 0.7633	\$ 0.1612
ISDN Call Pickup	\$ 0.0003	\$ 0.0001
ISDN Selective Call Rejection	\$ 0.0631	\$ 0.0132
ISDN Call Transfer Individual - All Calls (Ftr. 578)	\$ 0.0460	\$ 0.0098
Calling Name and Number Delivery	\$ 0.6130	\$ 0.5834
Unbundled Switching- Per MOU		 
Originating EO Local Switching per MOU	\$ 0.003961	\$ 0.000321
Termination EO Local Switching per MOU	\$ 0.003477	\$ 0.000284
Unbundled Tandem Switching		 
Tandem Switching MOU	\$ 0.000133	\$ 0.000115
Unbundled Common Trunk Ports		 
Common Trunk Port - End Office (per mou)	\$ 0.000374	\$ 0.000144
Common Trunk Port - Tandem (per mou)	\$ 0.000734	\$ 0.000284
Common Trunk Port - TOPS (per mou)	\$ 0.000337	\$ 0.000200
Unbundled Common Transport		
Fixed - Common	\$ 0.000115	\$ 0.000064
Per Mile	\$ 0.000002	\$ 0.000001
Unbundled Reciprocal Compensation		 
Meet Point A End Office (per mou)	\$ 0.002322	\$ 0.000428
Meet Point B End Office (per mou)	\$ 0.003969	\$ 0.001175
IOF		
DS-1 Fixed includes both ends	\$ 54.76	\$ 39.56
DS-1 per Mile	\$ 3.86	\$ 2.23
DS-3 Fixed includes both ends	\$ 499.44	\$ 196.24
DS-3 per Mile	\$ 57.72	\$ 31.03
STS-1 - Fixed includes both ends	\$ 503.00	\$ 197.61
STS-1 - per mile	\$ 57.92	\$ 31.11
OC-3 - Fixed includes both ends	\$ 1,441.40	\$ 582.52
OC-3 - per mile	\$ 173.90	\$ 95.44
OC-12 - Fixed includes both ends	\$ 4,113.45	\$ 2,570.08
OC-12 - per mile	\$ 374.14	\$ 243.72